

Individual Approach in Achieving Optimal Balance of THC and CBD in Supplementary Treatment of Neurological Diseases

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Introduction

If standard, conventional, evidence-based medicine has no adequate response or even has no any beneficial / positive effects on general health condition, there is no reason not to try the potential of Cannabis that originates from the famous, well-known biologically valuable composition of this extremely rich plant. This approach is based on understanding the fundamentals of nature incorporated in Cannabis cultivars, its recognized benefits, that are nowadays supported by increasing available scientific data.

Neither only THC, nor only CBD or any other single cannabinoid are only responsible for its famous beneficial effects. It makes clear why nature wisely merged more than 500 bio-active compounds, including richness of more than 140 cannabinoids in their acid and neutral form and about 200 terpenoids in this unique plant. That is the reason for the great importance of use of choosing the right, sophisticated "cold" extraction method and proper equipment in order to provide Full Spectrum Cannabis extracts containing much more compounds with minimum decomposition and loss. Accordingly, it is strongly advised that Cannabis-based product have to be provided by reliable official sources that assure high and standard quality of dried flowers, extracts and Cannabis-based final products, in accordance to GMPc requirements.

Cannabis-based products, especially ones containing Full Spectrum Cannabis natural extracts, are known as beneficial as additional treatment of wide pallet of diseases/health conditions, including neurological diagnosis such as: Epilepsy, Sclerosis Multiplex, Parkin's disease, Neuropathic pain, Tremor, and others (Barnes,

2006; Giacoppo, Bramanti & Mazzon, 2017; Rog et al., 2005; Russo et al., 2015; Stockings et al., 2018; Wade et al., 2004).

The aim of this study was to develop and suggest different individual approaches in achieving optimal balance and dosage of THC and CBD in supplementary treatment of neurological diseases.

Materials and methods

The following products, supplied by a local manufacturer of products containing cannabinoids, were used during this research:

- Medicinal Cannabis extracts (THC : CBD, 1 : 1)
(10 mg THC + 10 mg CBD)/mL and
- 10% CBD Oil sol.

Medicinal Cannabis extract containing declared content of THC and CBD in ratio 1:1, was administered to patients with neurological diseases by method of continuous slow titration of dose, in predefined time intervals, after initially starting the treatment with low doses of both cannabinoids, especially of THC. CBD 10% Oil solution was additionally included to increase TDI of CBD, in order to reach optimal balance of THC and CBD for each patient, with maximum benefit and minimum side-effects. The presented approach in creation and concepts of dosage schedules is based on my large and abundant more than 6 years' experience with patients who wish to remain anonymous, gained and confirmed on many international symposia, seminars and presentations, as well as communication with highly appreciate foreign experts and Cannabis therapy consultants and consumers.

Results and discussion

The main role in the treatment potential of natural Cannabis extracts plays the recognized famous synergism (Entourage effect) between CBD and THC, other cannabinoids, terpenes, phytosterols, flavonoids, carotenoids and many other bio-active compounds that are present in these extracts. Almost any formulation containing declared content of cannabinoids; primarily THC and CBD may be manufactured, by use of a single or composite extract of both cannabinoids in different ratio.

By adequate formulations containing both THC and CBD and enrichment with additional required quantity of CBD, they can successfully reach their dose of optimum quantity and balance of THC and CBD, that provides maximum benefit with minimum side-effects and may be considered as their individual continuous Maintenance Dose. The procedure of titration of the dosage of THC strictly follows the “go low-go slow” principle. Additional dosing of CBD, provided by parallel administered CBD border-line products that are available in wide concentration ranges, assures higher quantity of CBD (in mg) in daily dosage, if required. Eventually occurring side-effects of the treatment may be successfully corrected or even avoided by prolonging intervals of continuous titration for few days more, to get adapted to a lower dose interval and get well tolerated of such, before transferring to higher, subsequent dose interval.

First example is Introduction of treatment with low TDI dosage of 2 mg THC/27 mg CBD, followed by slow titration up to 9 mg THC/84 mg CBD in 4 time intervals, with continuous monitoring of the health benefits and side-effects ratio (Dosage Schedule I). If there are no significant side-effects, but still not satisfying improvement, it should be continued to I-First Continuous Dosing Schedule, starting from 10 mg THC/95 mg CBD. In 6 intervals, retaining continuously on TDI of 10 mg THC and titration only the dose of CBD, final TDI of 10 mg THC/160 mg CBD should be reached. If it is sufficient to improve the health condition, there is a little chance for occurring side effects of THC, primarily its psychotropic effects. When the improvement is not in correspondence with expectations, but significant side-effects are not detected, it should be continued with II-Second Continuous Dosing Schedule; by increasing of both THC and CBD, beginning from 10 mg THC/95 mg CBD to 20 mg THC/160 mg CBD. It starts from 10 mg THC/95 mg CBD in 6 intervals, by titration of dosage of both cannabinoids, TDI of 20 mg THC/160 mg CBD should be reached. It is important to note that it is not necessary for any consumer to reach the upper dosage of

20 mg THC/160 mg CBD. Each dosage between 10 mg THC/95 mg CBD to 20 mg THC/160 mg CBD, presented in the II-Second Continuous Dosing Schedule, that gives maximum benefit/side effects ratio, may be accepted as satisfying individual Maintenance Dose.

Conclusion

Several general requirements in dosage creation should be satisfied; low start, gradual titration of TDI dosage divided in several single doses with the highest evening dose of THC, parallel administered CBD product during first part of day and adaptability of duration of intervals, all in order to achieve optimal satisfying individual dosage.

In this way of creation and adaptation of dosage, by monitoring of general health condition, each patient supported by its family and doctor, based on benefit/side effects ratio, should achieve its individual Maintenance Dose in the supplementary treatment of Different Neurological Diseases.

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